REMARKS

In the Final Office Action mailed September 27, 2007, the Office took the following action: (1) objected to the drawings due to informalities; (2) objected to the specification due to informalities; (3) objected to claims 3, 7, 9, 16, and 27-30 due to minor informalities; and (4) rejected claims 1-7, 9, 12-21, 24-25, and 27-30 under 35 U.S.C. 103(a) as being unpatentable over Cantle et al. ("A Foundation Architecture For Elevating DSP in FPGAs", IDS document, Cite No. 1, published in 1999) (hereinafter "Cantle") in view of Dowling, U.S. Patent No. 6,163,836 (hereinafter "Dowling"). Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and the following remarks.

Objections to the Drawings

The Office objected to the drawings due to informalities. Applicant has attached Formal Replacement Drawings which include the requested correction in Fig. 1, reference 24, which has been relabeled as reference 26. Applicant thanks the Office for directing Applicant to the replacement drawings transmitted on December 17, 2004. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the objections to the drawings.

Objections to the Specification

The Office objected to the specification (Abstract) due to informalities. Specifically, the Office requested deletion of implied information which may be found in the title. Applicant has amended the Abstract as suggested by the Office. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the objections to the specification.

Objections to the Claims

The Office objected to the claims because of minor informalities. Each objection is discussed in turn.

Claims 3 and 16 were objected to as reciting acronyms. Applicant has spelled out each acronym in claims 3 and 16, as well as acronyms included in other claims such as claims 7, 9, 13, and 21.

Claim 7 was objected to as reciting "deliniate" instead of "delineate." Applicant has corrected this informality in claim 7, and also in claim 9 *sua sponte*.

Claim 9 was objected to for having an improper parenthetical of "Original" when the claim included an amendment. Applicant confirms the response to Office Action dated July 19, 2007 should have included a parenthetical of "Currently amended" associated with claim 9. Therefore, the objection is now moot. Applicant thanks the Office for examining the claims in light of this informality.

Claims 27-30 were objected to for not including citations to support in the specification. Applicant relies on at least the following sections of the specification in support of claims 27-30: page 4, lines 13-22; page 6, lines 11-15; and page 7, lines 18-23.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the objections to the claims.

Rejections under 35 USC § 103(a)

The Office rejected claims 1-7, 9, 12-21, 24-25, and 27-30 under 35 U.S.C. 103(a) as being unpatentable over Cantle in view of Dowling. Applicant respectfully traverses.

Claim 1

Applicant's claim 1, as amended, recites:

A method of performing a numerical simulation, comprising:
programming a programmable device using a plurality of function blocks;
receiving input data;
assigning the received input data to a first portion of the received input data and a second portion of the received input data;
routing the first portion of the received input data to a processor;
routing the second portion of the received input data to the programmable device;
performing a first portion of the numerical simulation on the processor using the first portion of the received input data;
performing a second portion of the numerical simulation on the programmable device using the second portion of the received input data;
combining the results of the first and second portions of the numerical simulation; and
outputting the combined results.

Applicant respectfully submits that Cantle and Dowling, either singularly or in combination, assuming *arguendo* that such combination is proper, fail to teach each recitation in claim 1, as is required by MPEP 2143 to establish a *prima facie* case of obviousness. More specifically, Applicant submits that the cited references fail to teach or suggest "assigning the received input data to a first portion of the received input data and a second portion of the received input data," "routing the first portion," and "routing the second portion."

The Office relies on Cantle as teaching "routing the first portion" and "routing the second portion" citing Cantle at page 2, Fig. 2, "routing a first portion to DSP as a coprocessor." (Final Office Action, page 4, paragraph 13, line 9 to page 5, line 3). The associated text to Fig. 2 of Cantle fails to disclose "routing" or "assigning." Instead, the Office relies on a bidirectional arrow connecting a block labeled "DSP Coprocessor" to a block labeled FPGA Main processor." The accompanying description states:

The DSP cannot be currently removed because it is still considered that certain parts of a DSP task are still best performed in the traditional DSP processor. Figure 2 depicts this architecture that is achievable today."

(Chantle, page 2, paragraph immediately preceding Fig. 2). Chantle continues by including a speculative statement of "future architechture that we will see" in the next paragraph. This speculative statement has no substantive value as it fails to describe a process that may be implemented (enabled) by one skilled in the art. As stated by Chantle regarding the current ability of the art, the DSP is not assigned nor is it routed as recited in Applicant's claim 1. Further, Chantle is silent as to a module, mechanism, or technique for implementing such an assignment or routing.

In addition, Applicant respectfully submits that Chantle fails to teach or suggest "combining the results of the first and second portions of the numerical simulation" as recited in claim 1. The Office relies on page 2, Fig. 2 and related text, Data Out; page 6, Fig. 5 inputting parallel digital video, sharing the floating point computing, and outputting the combined pixel manipulations." (Final Office Action, page 5, lines 11-13). However, these cited portion of Cantle do not explicitly disclose "combining the results of the first and second portions of the numerical simulation." Applicant respectfully requests clarification or a pin point reference as to where Chantle teaches the above recitations.

Claims 2-7, 9, 12, and 27-28 are dependent on base claim 1 and are at least allowable for their dependence upon an allowable base claim. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 1-7, 9, 12, and 27-28.

Claim 13

Applicant respectfully submits that Cantle and Dowling, either singularly or in combination, assuming *arguendo* that such combination is proper, fail to teach each recitation in claim 13. Applicant relies at least on similar reasoning as presented above, regarding claim 1, in

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support of claim 13. Claims 14-18 are dependent on base claim 13 and are at least allowable for their dependence upon an allowable base claim. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 13-18.

Claim 19

Applicant respectfully submits that Cantle and Dowling, either singularly or in combination, assuming *arguendo* that such combination is proper, fail to teach each recitation in claim 19. More specifically, Applicant submits that the cited references fail to teach "an input device configured to receive input data including a real input and an imaginary input." In the Final Office Action, the Office relies on I/O Connectors as shown in Fig. 5 and Data In to FPGA main processor in Fig. 2 of Cantle. (Final Office Action, page 8). However, Cantle is silent as to "input data including a real input and an imaginary input."

Claims 20-21, 24-25, and 29-30 are dependent on base claim 19 and are at least allowable for their dependence upon an allowable base claim. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection to claims 19-21, 24-25, and 29-30.

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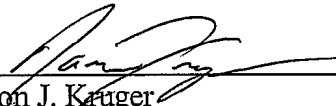BO1-0162US
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CONCLUSION

Applicant respectfully submits pending claims 1-7, 9, 12-21, 24, 25, and 27-30 are now in condition for allowance. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

Respectfully Submitted,

Dated: _2008-03-18_   By: _____
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Enclosure(s)
Formal Replacement Drawings